CSE 105 Review Quiz 4

This is an *individual* review quiz. You should not discuss questions or share answers with other students in the class. If you are unsure about the correct solution for a question, review the book and the lecture. If you are still unsure, make an educated guess.

We use notation from the "Regular Expressions" section of the book. Scores translate to participation points as follows:

- 4 or 5 points = 2 participation points
- 2 or 3 points = 1 participation points
- 0 or 1 points = 0 participation points

The deadline is Friday October 25th at midnight.

* Required

1. Email address *

2. First name *

3. Last name *

4. UCSD PID *

5. Q1: Which of the following sets are countably infinite? (select all that apply.) *

   * Check all that apply.

   - The set of positive integers {1,2,.....}
   - The set of all real numbers between 0 and 1 (both inclusive)
   - The set of all rational numbers between -2 and 2 (both inclusive)
   - The set of all languages over {0,1}
   - The set of all regular languages over {0,1}
   - The set of all strings over {0,1}

6. Q2: Is the set of non-regular languages closed under intersection? *

   * Mark only one oval.

   - Yes, because the set of regular languages is closed under intersection.
   - No, because the set of regular languages is closed under intersection.
   - Yes, because there are two disjoint non-regular languages.
   - No, because there are two disjoint non-regular languages.
7. Q3: Which of the following languages are regular (select all that apply). *

Check all that apply.

- { 1^k w 1^k | w is a string over {0,1} and k >=1}  
- { uw | u, w are strings over {0,1} with the same number of 1s}  
- { 1^k 0 1^k | k >= 1}  
- None of the above

8. Q4: Which of the following Regular Expressions define the language recognised by the DFA given below? (Select all that apply) *

Check all that apply.

- a*ba*b(a U b)* 
- (a U b)*ba*ba* 
- (a U b)*b(a U b)*b(a U b)* 
- None of the Above

DFA for q4

9. Q5: Suppose L is a language, and there is a string w such that w ∈ L and we can write w=pqr so that p q^i r ∈ L for all natural numbers i (i>0). This implies that *

Mark only one oval.

- L is regular 
- L is nonregular 
- L could be either regular or nonregular 
- Other: __________________________

☐ Send me a copy of my responses.